



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,673	11/18/2003	Edward R. Beadle	HAR62 013	2301
7590 06/13/2006				
MARK C. COMTOIS		EXAMINER		
Duane Morris LLP		PHAN, DAO LINDA		
Suite 700		ART UNIT		
1667 K Street		PAPER NUMBER		
Washington, DC 20006		3662		
DATE MAILED: 06/13/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/714,673	BEADLE ET AL.	
	Examiner	Art Unit	
	Dao L. Phan	3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 and 51-62 is/are pending in the application.
- 4a) Of the above claim(s) 37-49 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-36 and 56-62 is/are allowed.
- 6) ☒ Claim(s) 51-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3662

1. The listed documents cited in the INFORMATION DISCLOSURE STATEMENT filed Feb. 8, 06 need to be listed in the PTO-1449 for consideration.

2. Claims 1-36, 56-62 are allowed.

3. Withdrawn claims 37-49 need to be canceled.

4. Copies of:

Agee, B.G., "The Property Restoral Approach to Blind Adaptive Signal Extraction"

Bai, Z., J. Demmel, J. Dongarra, A. Ruhe and H. van der Vorst, Templates for the Solution of Algebraic Eigenvalue Problems: A Practical Guide.

Gantmacher, F.R., The Theory of Matrices, Volume I.

Gantmacher, F.R., The Theory of Matrices, Volume II.

Golub, G.H. and C.F.. Van Loan, Matrix Computations.

Halmos, P.R. Finite-Dimensional Vector Spaces.

Harville, D.A., Matrix Algebra from a Statistician's Perspective.

Hayes, M.H., Statistical Digital Signal Processing and Modeling.

Haykin, S., Adaptive Filter Theory.

Johnson, D.H. and D.E. Dudgeon, Array Signal Processing: Concepts and Techniques.

Jutten, C. and J. Herault, "Blind Separation of Source, Part I: An Adaptive Algorithm Based on Neuromimetic Architectures,"

Kanatani, K., Statistical Optimization for Geometric Computation: Theory and Practice.

Markus, A.S., Introduction to the Spectral Theory of Polynomial Operator Pencils, Translation of Mathematical Monographs, Vo. 71.

Martin, G.P., "Polarization Based Steering Vector Determination,"

Art Unit: 3662

Nandi, A.K., Blind Estimation Using Higer-Order Statistics.

Nikias, C.L. and A.P. Petropulu, Higher-Order Spectra Analysis: A Non-Linear Signal Processing Framework.

Papoulis, A., Probability, Random Variables, and Stochastic Processes.

Rosenblatt, M., Stationary Sequences and Random Fields.

Schott, J.R., Matrix Analysis for Statistics.

Strang, G. Introduction to Linear Algebra.

Van Dooren, P., "Reducing Subspaces: Definitions, Properties, and Algorithms"

Widrow, B. and S.D. Stearn, Adaptive Signal Processing.

are requested for examination.

5. In response to applicant's argument, the recitation "for determination the geolocation of a transmitter" has not been given patentable weight because it's a recitation of the intended use of the claimed invention.

6. In response to applicant's arguments, the recitation "determination the geolocation of a transmitter" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Art Unit: 3662

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 51-55 are rejected under 35 U.S.C. 102(e) as being anticipated by Fiore et al (US 2005/0212703) or Lucidarme (US 2004/0259565).

Fiore et al teach a method for determining the geolocation of a transmitter which emits a signal received by a receiver with a known location and determining the angle of arrival of the received signal, the improvement comprising determining a higher-order statistic of the received signal and estimating the angle of arrival as a function of the higher-order statistic, wherein the higher-order Statistic is a fourth order cumulant. See abstract.

Lucidarme teaches a method for determining the geolocation of a transmitter which emits a signal received by a receiver with a known location and determining the angle of arrival of the received signal, the improvement comprising determining (paragraph 0014, claim 3 &11) a higher-order statistic of the received signal and estimating (claim 3 &11) the angle of arrival as a function of the higher-order statistic, wherein the higher-order Statistic is a fourth order cumulant.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

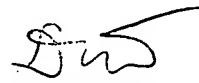
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dao L. Phan whose telephone number is (571)272-6976. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (571)272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3662

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


/s/ [Signature]
[Illegible text]